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# NOAA Climate Transition Program

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## Introduction

This document describes the NOAA Climate Transition Program (NCTP). NCTP is a comprehensive program with a well-defined management structure for expanding regional climate services. It provides a mechanism for supporting research that addresses user needs and requirements, transitioning the research to operations, and providing education and outreach capacity for new products.

## Background

A major element of the Climate Change Research Initiative (CCRI) is the commitment to incorporating scientific results into decision support resources that meet national and regional requirements. At the regional level, the initiative resonates the need for advancing climate science, building scientific capacity, supporting communications between the research community and decision makers, and developing products that meet user needs.

NOAA's climate initiatives in recent years have articulated a vision for developing a nation-wide capacity to provide customer-driven regional climate services. This vision supports the National Research Council's Board on Atmospheric Sciences and Climate's (BASC) 2001 study, *A Climate Services Vision: First Steps Toward the Future*, which made recommendations for building robust U.S. climate services.

One recommendation made by BASC was to "ensure a strong and healthy transition of U.S. research accomplishments into predictive capabilities that serve the nation." NOAA's Regional Decision Support and Services (RDSS) initiative addresses this recommendation. RDSS is a comprehensive strategy to support regional policy and management decisions by bolstering existing research and outreach capacity and formalizing collaborations within the climate community. RDSS will support the transition of applications from research to operations where they can be applied directly to climate-sensitive systems.

Without a clearly defined mechanism for driving collaborations, the climate community frequently resorts to ad hoc methods and processes and the "old" linear model of research. In the old model, the research community identifies operational needs and delivers the fruits of the research to the operational community, which then feeds the information to the users/decision makers. Because this process has proven to be inadequate, NOAA now proposes to support climate community collaborations for transitioning research to applications through NCTP.

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## NOAA Climate Transition Program (NCTP)

NCTP is a competitive program that supports transition of climate information tools and management insights into user-relevant products. It facilitates the development of new or enhanced regional products, information delivery technology, and sustained and systematic communication and feedback, especially at the grass roots level. The program goals are to focus NOAA funds to facilitate transition of climate information tools such that the program will:

- Respond to user/decision maker requirements
- Develop a deliberate bridge for research to applications
- Advance focused scientific research
- Increase scientific capacity
- Support interactive learning
- Develop infrastructure
- Adapt as the demand for climate services increases

The program objective is:

> To define a structure for regional research projects such that they can be effectively responsive to user needs and result in products of value to regional/local climate-sensitive decision-making processes.

Following a Letter of Intent, the program will entertain proposals for funding from the climate community and encourages interdisciplinary topics. The climate community is made up of NOAA and other federal agencies, universities, Regional Integrated Sciences and Assessments centers, Regional Climate Centers, State Climatologists, as well as other private-sector groups. The proposals will have to meet specific criteria, as well as address the program goals and objective.

## NCTP Criteria for Proposals

NCTP is based on a "unit model" (Figure 1) that defines the interactions among "unit" participants or components, representing research, operations, extension, and the decision maker (user). Within the unit, participants will collaborate to identify a problem, develop a prototype solution and product, and transition the product to operations. Unit collaborations will facilitate providing education and outreach to the user community on the use of the product.

Problem identification will result from collaboration between the user community (decision makers) and a research component. An appropriate operational component will work with the research component to identify methodologies for prototype development and transition to operations. To fully define the unit, an extension service will be an integral part of the entire process to understand the problem and the product to be developed as a solution. It will design activities that effect behavior change through constituent-driven programs to transition the new product into a useful climate information tool for the decision maker.

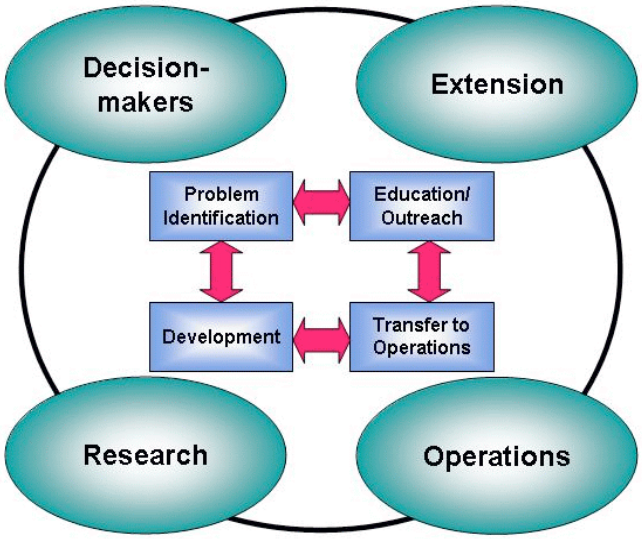


Figure 1 NCTP Unit Model

The unit components will be identified and defined explicitly within the proposal. One entity may act as more than one component, but cannot act as the entire unit as collaborations with other members of the climate community are required. The unit is envisioned as a capsule to address and solve a specific decision maker problem and provide a suitable, clearly-stated outcome. The proposal should include a project management description.

To ensure collaborations among the components, one criterion for the proposals is participant contributions should be clearly defined. This may be in the form of matching funds, personnel support, or other contributions to the development of the outcome. The proposal should address a methodology for maintaining the outcome in an operational mode. Cooperative agreements among the participants must also be a part of each proposal, and these may be represented as signatures on the proposal and/or more formal documents addressing contributions, such as Memoranda of Understanding.

Proposals should have a statement of duration not to exceed five years. As part of the criteria, a project time line must be submitted articulating project milestones. Also, a benefit analysis should be included that addresses either the economic and quantitative benefits, benefit to socio-economic systems, benefits to ecosystems, or other measurable benefit. Post audit issues such as product validation, verification, and refinement requirements for the future should also be addressed, and the expected outcome must be clearly defined. Relevance to and support for NOAA's mission goals should also be articulated in the proposal to receive full consideration.

An example of a unit may be a manager of a dam (decision maker/user) who wishes to regulate flow through the dam on a daily basis. A researcher at a university may conduct research to establish river flow upstream and combine that information with climatological rainfall amounts,

and work with an operational entity at the dam who will develop a product to determine daily flows through the dam structure. An extension component would work with the decision maker, the researcher, and the operational entity to establish what the flow ranges will be, and the effects of the changes to local and downstream community. It would educate the community, which may be local farmers, fishermen, sportsmen, etc. such that they modify their activities to take advantage of changes in flow from the dam.

## NCTP Management

Once the program is fully established, the program will be managed by a program manager in the NOAA Climate Office (NCO). The program manager will be responsible for developing program announcements and managing resources and the peer review process. Proposal review will leverage NOAA's existing infrastructure for review processes, such as those in the Sea Grant Office which include both NOAA and external reviewers. The program manager will make decisions for funding based on the program priorities, peer reviews, and the recommendations of an advisory panel which will include representation from all NOAA line offices and will be appointed by the NCO Climate Board. The Climate Board will be responsible for setting program priorities annually. The NCO Director will be the approving official. The program authors will provide initial oversight of the program.

Each unit submitting a proposal will be categorized based on the type of project (agriculture, fisheries, hydrology, etc.), and will be required to provide semi-annual updates demonstrating that project milestones are being met. At the end of the project, in addition to a final project report, a sample of the product developed must be provided to the program management.

## NCTP Proposal Process

Letters of Intent addressing the unit model concept will be solicited from the climate community. Following a positive response from the program manager, a formal proposal will be required. A standardized format for the proposals will be made available to interested parties. The proposal must clearly demonstrate that the project is user-oriented and has value to regional and/or local climate-sensitive decision-making processes, and the outcome must be clearly defined.

## NCTP Review Process

Once a proposal has been submitted, it will undergo an initial review process to ensure it meets the proposal criteria and the standardized format required by the program. Further review will be conducted in two stages by the program management.

First, the managing office will be responsible for organizing and convening a review panel of experts in climate services and related fields. Reviewers will be asked to objectively assign a merit value to the proposals they are reviewing.
The program management will then make final selection of projects to be funded. Their decision will be based on the scaled recommendations of the merit reviewers, funding allocations, and the

project value to regional and/or local climate-sensitive decision-making processes.

## Summary

The NOAA Climate Transition Program is a model for proposal-driven climate-sensitive research. The program leverages the existing NOAA infrastructure as well as that of other government and private climate offices. It promotes regional research and capacity building at research institutions, and promotes the delivery of effective climate information and products to regional and local decision makers/users.

The program establishes a well-defined management process which will enable it to be quickly implemented propelling NOAA forward in the climate services arena. The program will be open to the climate community, including the private sector, and it will encourage the most efficient transition of research to applications of climate services. For NOAA, NCTP integrates line office participation in climate services, and supports a matrix management structure for regional climate research and services.

The NCTP model provides a methodology for user-driven research to deliver useful products, and can therefore, with modification, be applied to other research sectors.

## NCTP Support

During the development of NCTP, input was solicited from several climate experts and experts from other research communities. To date, all those solicited have expressed their support for the program. Those solicited include senior leadership within NOAA, State Climatologists, members of the academic community, private sector climate specialists, Regional Climate Center directors, as well as groups from other federal agencies.

## NCTP Performance Measures for FY05

1. Establish formal program structure.
2. Develop Federal Registry Notice announcing opportunity.
3. Develop brochure for distribution to interested parties.
4. Fund at least three projects
5. Report program success to NCO management